

**Amendments to the Drawings:**

The enclosed replacement sheets of drawings include changes to Figs. 1 through 4(b) to address the objections stated in the Office Action. These five sheets replace the original five sheets for Figs. 1 through 4(b).

Enclosures: (5 replacement sheets of drawings)

**Remarks/Arguments:**

In response to the Final Office Action, the applicant offers the following remarks. Claims 1 through 15 are pending in this application. Independent claims 1 and 6 have been substantively amended to address the patents cited and issues raised in the Office Action.

The Office Action rejected claims 6, 7, 10, 11, 14, and 15 under 35 U.S.C. § 102(b) as being anticipated by Brockelsby et al., U.S. Patent No. 5,192,954 ("Brockelsby"). Claims 1 through 5, 8, 9, 12, and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Brockelsby patent in combination with one or more secondary references, including Der Ghazarian et al., Freeman et al., and Strassman.

Applicant respectfully contends that Brockelsby does not anticipate amended claims 6, 7, 10, 11, 14, or 15. Moreover, Applicant respectfully contends that neither Brockelsby standing alone, nor in combination with any of the cited patents renders obvious the present claimed invention.

A. Claim 6 and Claim 1 Recite Patentable Subject Matter

As amended, claim 6 recites:

6. An intrinsic pavement transmitter and antenna, comprising a roadway, including:

(a) a suitable wearing course material; and

(b) an effective amount of radio frequency conductive material, sufficient to conduct radio frequency signals between at least two locations within the pavement, such that the radio frequency signals are conducted entirely within the pavement transmitter and antenna. (Emphasis added).

Similarly, independent claim 1, as amended, provides:

1. A radio communications system comprising:

(a) an intrinsic pavement transmitter and antenna;

(b) a first transmitter/receiver, at a first point along the intrinsic pavement transmitter and antenna, and in communication with an end-user; and

(c) a second transmitter/receiver, at a second point along the intrinsic pavement transmitter and antenna, and in communication with an end-user; wherein the intrinsic pavement transmitter and antenna conducts radio frequency signals between the first and second transmitter/receiver entirely within the pavement transmitter and antenna. (Emphasis added).

Accordingly, as now explicitly provided within the two independent claims, the present invention discloses an intrinsic pavement radio frequency ("RF") transmitter and antenna, and a radio communications system having an intrinsic pavement transmitter and antenna such that the RF signals are conducted entirely within the pavement transmitter and antenna, or are conducted entirely through the conductive paving materials. As specifically disclosed in the radio communications system of claim 1, both a first transmitter/receiver and a second transmitter/receiver are located at stationary points along the intrinsic pavement transmitter and antenna. By design, the roadway paving material is the conductor and transmitter of the radio frequency signals between the first transmitter/receiver and the second transmitter/receiver.

The support for this limitation is found at page 3, paragraph [0041] of the pending published application (U.S. Patent Application Publication No. US 2003/0036369) noting that "[t]he radio frequency 56 is conducted *along the intrinsic pavement transmitter and antenna* 10 until it reaches another transmitter/receiver." (Emphasis added).

The present invention claim 6 intrinsic pavement transmitter and antenna specifically further teaches a roadway including a suitable wearing course material (for example asphalt or concrete), with and having a necessary and effective amount of RF conductive material to transmit and receive radio frequency signals entirely through the pavement.

The Office Action notes that Brockelsby discloses a "transmit and receiver antenna" located within the roadway. While Fig. 25 of Brockelsby does so show a "transmit and receiver antenna" within the roadway, Brockelsby only discloses "antennas for electromagnetic communication between stationary locations along a roadway and vehicles traveling along the roadway equipped with transponders carrying information relating to the vehicle." Brockelsby, col. 1, lines 34 through 38. The transponder in Brockelsby is by definition limited to moving vehicles, and thus the transponder is located above or outside

of the roadway. Applicant notes that a specific object of Brockelsby is to "provide road mounted antennae suitable for capturing transponders carried by vehicles occupying reduced portions of a standard highway lane." Brockelsby, col. 2, lines 3 through 5. Because the transponder is located about the roadway, the RF signals transmitted from the transmit and receiver antenna are only received at the transponder if the RF signals are conducted outside of and above the roadway.

Indeed, there is no disclosure, suggestion or motivation in Brockelsby where a transponder is stationary and placed anywhere within the roadway or pavement. Only if the transponder were located within the roadway would Brockelsby disclose a RF communication system or an intrinsic pavement transmitter and receiver where the RF signals are conducted entirely within the roadway. Because that is not the design or system structure disclosed or suggested by Brockelsby, the Brockelsby patent does not anticipate or render obvious the claimed invention. Applicant respectfully requests withdrawal of the noted rejection based upon Brockelsby.

The Office Action also rejected claim 1 under 35 U.S.C. § 103(a) as being rendered obvious by Brockelsby in view of Der Ghazarian et al., U.S. Patent Application No. 2002/0128769 ("Der Ghazarian"). As argued above, Brockelsby does not disclose, show or suggest the claimed necessary elements of the pending invention, as amended. More specifically, the present invention is directed to and claims a radio communications system having an intrinsic pavement transmitter and antenna, and a first and second transmitter/receiver at a respective first and second point along the intrinsic pavement transmitter and antenna, where both of the first and second transmitter/receiver are in communication with an end-user, and the RF signals transmitted and received between the first and second transmitters/receivers are entirely conducted within the pavement. Brockelsby does not disclose or suggest such a system or structure. The Office Action acknowledges that Brockelsby does not disclose that the first and second transmitter/receivers are in communication with an end-user, as claimed in the present invention.

Similar to Brockelsby, Der Ghazarian does not disclose a system in which communication occurs between a receiver and transmitter such that the RF signals are conducted entirely within the roadway pavement. Accordingly, Applicant respectfully contends that Brockelsby in view of Der Ghazarian do not render obvious the pending claims

as amended, and accordingly requests withdrawal of the noted rejection based upon Brockelsby further in view of Der Ghazarian.

The advantages of the subject matter of claims 1 and 6 are not attained or suggested by the Brockelsby patent alone, or in combination with any of the other cited patents. This is because claims 1 and 6 contain features as described above that are not taught or suggested by the applied references. As explained by Judge Rich in *In re Civitello*, 144 USPQ 10, 12 (CCPA 1964), when a claimed feature is not disclosed by the reference, the reference cannot render the claim obvious:

Since Haslacher fails to disclose the feature of the claim relied on, we do not agree with the patent office that it would suggest modifying the Craig bag to contain the feature. The Patent Office finds the suggestion, only after making a modification which is not suggested, as we see it, by anything other than appellant's own disclosure. This is hindsight reconstruction. It does not establish obviousness. (Emphasis in original.)

Thus, the applicant does not agree with the Office Action that the Brockelsby patent supports a prima facie case of anticipation or obviousness.

B. Dependent Claims

Because claims 2 through 5, and 7 through 15 depend directly from patentable claim 1 and patentable claim 6, these dependent claims are also patentable. See, e.g., *In re McCarn*, 101 USPQ 411, 413 (CCPA 1954) ("sound law" requires allowance of dependent claims when their antecedent claims are allowed). Moreover, claims 2 through 5, and claims 7 through 15 are each non-obvious in view of the applied references.

C. Drawings

Applicant submits with this Amendment revised and substitute drawings to address the objections raised in the Office Action regarding the five drawing sheets. Applicant respectfully requests withdrawal of the drawings rejection.

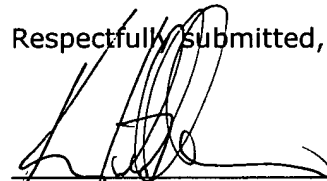
D. Conclusion

By this Amendment, pending claims 1 through 15 have been amended directly (or indirectly through an amendment to the two independent claims) to place the application in better condition for examination and allowance.

Applicant respectfully contends that the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) should be withdrawn. Favorable action is earnestly solicited.

Finally, the Examiner is invited to call the applicant's undersigned representative if any further action will expedite the prosecution of the application or if the Examiner has any suggestions or questions concerning the application or the present Response. In fact, if the claims of the application are not believed to be in full condition for allowance, for any reason, the applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP § 707.07(j) or in making constructive suggestions pursuant to MPEP § 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully Submitted,



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Enclosures: Drawings (5 replacement sheets)

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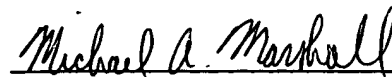
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